

WHAT IS CLAIMED IS

1. A maintenance method in a nuclear power plant including a reactor primary containment vessel provided with a suppression pool of a suppression chamber, comprising the steps of:

improving clearness of a water in the suppression pool and decontaminating an interior of the suppression pool; and

inspecting a coated film applied on an inner surface of a wall portion of the suppression pool,

said improving, decontaminating and inspecting steps being performed while maintaining a water level in the suppression pool.

2. A maintenance method in a nuclear power plant according to claim 1, further comprising the step of carrying out a repair coating to the coated film through the underwater operation in the suppression pool after inspecting the coated film applied on the inner surface of the suppression pool wall.

9. A maintenance method in a nuclear power plant according to claim 1, wherein the clearness and the decontamination of the water in the suppression pool is performed by collecting substances floating in the water

of the suppression pool and removing and collecting sludge substance deposited on an inner bottom surface of the suppression pool wall.

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A maintenance method in a nuclear power plant according to claim <sup>9</sup>3, wherein the substance floating in the water of the suppression pool is sucked up together with the surrounding water out of the suppression pool by suction means movable in or above the water.

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A maintenance method in a nuclear power plant according to claim <sup>10</sup>4, wherein the substances and the surrounding water sucked up in the suppression pool are subjected to solid-liquid separation on an outside the suppression pool.

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A maintenance method in a nuclear power plant according to claim <sup>9</sup>8, wherein said suction means comprises a rotating brush and suction port arranged around the rotating brush so as to suck up the sludge substance on the inner bottom surface of the suppression pool together with the surrounding water therein.

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A maintenance method in a nuclear power plant according to claim 1, wherein the decontamination of the interior of the suppression pool includes removing of

sludges and deteriorated matters on the inner surface of the suppression pool wall.

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8. A maintenance method in a nuclear power plant according to claim <sup>13</sup>7, wherein the sludges on the inner surface of the suppression pool wall are removed through a sucking step by using a suction means comprising a rotating brush and a suction port arranged around the rotating brush so as to suck up the sludges and deteriorated matters together with the surrounding water in the suppression pool.

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8. A maintenance method in a nuclear power plant according to claim <sup>14</sup>8, wherein the sludges and the deteriorated matters sucked up with the surrounding water in the suppression pool are subjected to solid-liquid separation on an outside of the suppression pool.

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10. A maintenance method in a nuclear power plant according to claim 1, wherein the inspecting step of the coated film applied on the inner surface of the suppression pool wall is performed by visually observing an surface condition of the coated film by using an underwater camera unit.

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11. A maintenance method in a nuclear power plant

according to claim <sup>16</sup>~~18~~, wherein the underwater camera unit includes at least one of a fixed camera disposed in the suppression chamber and a camera movable in the water of the suppression pool.

<sup>18</sup>  
~~12~~. A maintenance method in a nuclear power plant according to claim <sup>17</sup>~~11~~, wherein the underwater camera unit includes a fixed camera disposed in the suppression chamber and a camera movable in the water of the suppression pool, said fixed camera being used to set a general inspection position in the suppression pool and said movable camera including a first movable camera used to set a fine position approaching the inspection point and a second movable camera used to observe a state of the coated film while approaching the inspection position more closely than the first movable camera.

<sup>19</sup>  
~~13~~. A maintenance method in a nuclear power plant according to one of claim <sup>17</sup>~~11~~, wherein information obtained by the underwater camera unit is displayed on a monitor television disposed outside the suppression pool to thereby allow observation in the air.

<sup>20</sup>  
~~14~~. A maintenance method in a nuclear power plant according to claim 1, further comprising the step of carrying out a repair coating to the coated film through

the underwater operation in the suppression pool after inspecting the coated film applied on the inner surface of the suppression pool wall.

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A maintenance method in a nuclear power plant according to claim <sup>20</sup>~~14~~, wherein said repair coating step to the coated film on the inner surface of the suppression pool wall is carried out by peeling off a deteriorated or deformed coated film at a portion to be repaired by using one of a disc sander and a grinder provided with a suction means and a substrate treatment is carried out by sucking up the surrounding water out of the suppression pool.

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~~16~~.

A maintenance method in a nuclear power plant according to claim <sup>20</sup>~~14~~, wherein said repair coating step of the coated film on the inner surface of the suppression pool wall is carried out by applying an underwater coating to the inner surface of the suppression pool wall by using one of a brush having suction means arranged around the brush, a roller and other coating means and a coating splashed during the underwater coating step is sucked up outside the suppression pool together with the surrounding water.

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~~17~~. A maintenance method in a nuclear power plant according to claim 1, further comprising the steps of

preparing a film thickness measuring device into the suppression pool and measuring a thickness of the coated film on the inner surface of the suppression pool wall by using the film thickness measuring device.

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A maintenance method in a nuclear power plant according to claim 1, further comprising the step of preparing an underwater plate thickness measuring device into the suppression pool and measuring a plate thickness of a plate constituting the suppression pool wall by using the plate thickness measuring device.

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A maintenance method in a nuclear power plant according to claim 1, further comprising the step of closing a strainer provided on the inner surface of the suppression pool wall in an underwater operation and inspecting a valve of a piping communicating with the outside of the suppression pool through the strainer.

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A maintenance method in a nuclear power plant according to claim 1, further comprising the step of welding defect portions and portions to be repaired of the suppression pool wall, inner structure of the suppression pool, ducts, machineries and duct supports in an underwater operation in the suppression pool.

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21. A maintenance method in a nuclear power plant according to claim 1, further comprising the steps of welding defect portions and portions to be repaired of the suppression pool wall, inner structure of the suppression pool, ducts, machineries and duct supports in an underwater operation in the suppression pool and carrying out non-destructive test to said welded portions in an underwater operation in the suppression pool for quality inspection.

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22. A maintenance method in a nuclear power plant according to claim 1, further comprising the step of carrying out a cutting working for repairing an inner structure of the suppression pool, ducts, machineries and duct supports in an underwater operation in the suppression pool.

23. A maintenance method in a nuclear power plant including a reactor primary containment vessel provided with a spent fuel storage pool, comprising the steps of:

improving clearness of a water in the spent fuel storage pool and decontaminating an interior of the spent fuel storage pool;

inspecting a surface condition of an inner surface of a wall portion of the spent fuel storage pool,

said improving, decontaminating and inspecting

steps being performed while maintaining a water level in  
the spent fuel storage pool.

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